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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,681	11/20/2001	Ukyo Mori	DP-827 US	9011

7590 12/08/2005  
McGinn & Gibb, PLLC  
Suite 200  
8321 Old Courthouse Road  
Vienna, VA 22182-3817

EXAMINER

DEAN, RAYMOND S

ART UNIT PAPER NUMBER

2684

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,681

Applicant(s)

MORI, UKYO

Examiner

Raymond S. Dean

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 – 2 are rejected under 35 U.S.C. 102(a) as being anticipated by Azima et al. (WO 00/02417), hereafter Azima1.

Regarding Claim 1, Azima1 teaches an electronic device comprising: a main body (Figures 3, 4, Page 11 lines 14 – 15); a display disposed on the main body for displaying information (Figures 3, 4, Page 11 lines 24 – 26); a transparent plate member provided on the main body, extending over the surface of the display (Figure 4, Page 11 lines 26 – 28, Page 12 lines 1 – 4) and a driving unit positioned on the transparent plate other than over the display, for vibrating the plate member in response to an audio signal (Figure 4, Page 12 lines 4 – 8).

Regarding Claim 2, Azima1 teaches an electronic device comprising: a main body having a microphone near a first end of the front surface thereof (Figures 3, 4, Page 11 lines 14 – 15, line 21); a display disposed on the main body for displaying information (Figures 3, 4, Page 11 lines 24 – 26); a transparent plate member provided on the main body, extending over the surface of the display (Figure 4, Page 11 lines 26 – 28, Page 12 lines 1 – 4) and a driving unit positioned on the transparent plate other

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than over the display, for vibrating the plate member in response to an audio signal (Figure 4, Page 12 lines 4 – 8).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 15, 22 – 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaschke (5,99,821).

Regarding Claim 15, Kaschke teaches an electronic device comprising: a main body (Figure 1); a display disposed on the main body for displaying information (Figure 1, 114); a plate member having a transparent central section overlying the display (Figures 1, 2, the top surface of the user interface module is the plate member, said surface comprises a transparent section enabling the display to be viewed by the user) and a colored section adjacent the transparent central section and positioned other than overlying the display (Figures 1, 2, the sections surrounding the transparent section comprise color); and a driving unit connected to the colored section of the plate member for vibrating the plate member in response to an audio signal (Figures 1, 2, Column 2 lines 4 – 8, the electro-acoustic transducer (108) is the driving unit).

Regarding Claim 22, Kaschke teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches a plurality of driving units installed at plural places on the colored section of the plate member (Figures 1, 2, transducers (108, 110).

Regarding Claim 23, Kaschke teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches wherein the colored section comprises an edge section circumscribing the transparent central section (Figures 1, 2, the sections surrounding the transparent section comprise color).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 – 6, 11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima et al. (WO 00/02417), hereafter Azima1 in view of Azima et al. (US 6,332,029), hereafter Azima2.

Regarding Claims 3, 4, 11, 13, Azima1 teaches all of the claimed limitations recited in Claims 1, 2. Azima1 further teaches a first voice coil/ voice coil installed on the transparent plate member adjacent an edge thereof (Page 12 lines 4 – 8).

Azima1 does not teach a magnet/magnet installed on the transparent plate member, adjacent an edge thereof.

Azima2 teaches a magnet/magnet installed on the transparent plate member, adjacent an edge thereof (Figure 9, Column 30 lines 16 – 23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the vibration exciter of Azima1 with the magnet of Azima2 for the purpose of providing an alternate means for launching or exciting waves as taught by Azima2.

Regarding Claims 5, 6, Azima1 teaches all of the claimed limitations recited in Claims 1, 2. Azima1 does not teach a plurality of driving units installed at plural places on the transparent plate member, adjacent edges thereof.

Azima2 teaches a plurality of driving units installed at plural places on the transparent plate member, adjacent edges thereof (Column 14 lines 6 – 15, the 24 possible transducer sites from each corner comprises sites adjacent to edges of the loudspeaker panel).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transducer configuration of Azima2 in the transparent plate of Azima1 for the purpose of placing the vibration exciter at positions where the dead spots are low or least thereby enabling optimal wave excitation as taught by Azima2.

7. Claims 7 – 10, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima et al. (WO 00/02417), hereafter Azima1 in view of Azima et al. (US

6,332,029), hereafter Azima2, as applied to Claims 3, 4, 11, 13 above, and further in view of Porrazzo et al. (5,872,855).

Regarding Claims 7, 12, 14, Azima1 in view of Azima2 teaches all of the claimed limitations recited in Claims 3, 11, 13. Azima2 further teaches the magnets are disposed at places inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Azima1 in view of Azima2 does not teach wherein the voice coil is a planar coil having a shape of a square frame.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a square frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claims 8, Azima1 in view of Azima2 teaches all of the claimed limitations recited in Claim 4. Azima2 further teaches the magnets are disposed inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Azima1 in view of Azima2 does not teach wherein the voice coil is a planar coil having a shape of a quadrilateral frame.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a quadrilateral frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claims 9, 10, Azima1 in view of Azima2 teaches all of the claimed limitations recited in Claims 3, 4. Azima1 in view Azima2 does not teach wherein the first voice coil is a planar voice coil and a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed.

Porrazzo teaches planar voice coil (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped) and a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).



It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the voice coil arrangement taught by Porrazzo in loudspeaker panel of Azima1 in view of Azima2 for the purpose of adding versatility to the performance of said loudspeaker panel as taught by Porrazzo.

8. Claims 16, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaschke (5,99,821) in view of Azima et al. (US 6,332,029).

Regarding Claims 16, 19, Kaschke teaches all of the claimed limitations recited in Claim 15. Kaschke further teaches a driving unit installed on the colored section of the plate member (Figures 1, 2, Column 2 lines 4 – 8, the electro-acoustic transducer (108) is the driving unit).

Kaschke does not teach a magnet/magnet installed on the colored section of the plate member, and a voice coil/voice coil installed on the colored section of the plate member.

Azima teaches a magnet (Figure 9, Column 30 lines 16 – 23), and a voice coil (Column 23 lines 54 – 57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transducer of Kaschke with the magnet of Azima for the purpose of providing an alternate means for enabling a user to hear audio data as taught by Azima.

9. Claims 17 – 18, 20 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaschke (5,99,821) in view of Azima et al. (US 6,332,029), as applied to Claims 16, 19 above, and further in view of Porrazzo et al. (5,872,855).

Regarding Claims 17, 20, Kaschke in view of Azima teaches all of the claimed limitations recited in Claims 16, 19. Azima further teaches the magnets are disposed at places inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Kaschke in view of Azima does not teach wherein the voice coil is a planar coil having a shape of a quadrilateral frame.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a quadrilateral frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claims 18, 21, Kaschke in view of Azima teaches all of the claimed limitations recited in Claims 16, 19. Kaschke in view of Azima does not teach wherein the first voice coil is a planar voice coil and a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed.

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Porrizzo teaches planar voice coil (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped) and a second planar voice coil adjacent the first voice coil in a direction orthogonal to a surface on which the first voice coil is installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the voice coil arrangement taught by Porrizzo in the mobile device of Kaschke in view of Azima for the purpose of adding versatility to the performance of the earpiece as taught by Porrizzo.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Raymond S. Dean  
November 16, 2005



NAY MAUNG  
SUPERVISORY PATENT EXAMINER